

REMARKS

Reconsideration and allowance of the application are respectfully requested in light of the above amendments and the following remarks.

Claims 1-2, 4-13, 19-26, 28, 34-43, and 45 have been amended to clarify various aspects of the claimed subject matter, to place all elements in non-means-plus-function format, to ensure proper antecedent support for each recited feature, and to correct minor grammatical mistakes. Claims 46-51 have been added, and claims 3, 14-18, and 29-33 have been cancelled without prejudice or disclaimer. Support for the amendments to claims 11, 26, 37 and 43 is found, for example, in paragraphs [0055], [0062], and [0072] of the published U.S. application. Support for newly added claims 46, 48 and 50 is found, for example, at paragraph [0030] and [0057]-[0070] (first embodiment) of the published U.S. application. Support for new claims 47, 49 and 51 is found, for example, at paragraph [0031] and [0071]-[0081] (second embodiment) of the published U.S. application. No new matter is added. (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments).

Claims 9, 10, 12, 13, 24, 25, 27, 28, 38, 39, 44 and 45 stand rejected under 35 U.S.C. §102(e) as being anticipated by Venkitaraman et al. (US 2003/0161287) (hereinafter, “Venkitaraman”). Claims 1-5, 7, 11, 14-20, 22, 26, 29-33, 35, 37, 41 and 43 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Venkitaraman in view of Janneteau et al. (US 7,430,174) (hereinafter, “Janneteau”). Claims 6, 21, 34, and 40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Venkitaraman in view of Janneteau and Korus et al. (US 6,721,297) (hereinafter, “Korus”). Claims 8, 23, 36 and 42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Venkitaraman in view of Janneteau and Watanabe et al. (US

7,020,440) (hereinafter, “Watanabe”). To the extent that these rejections may be deemed applicable to the amended and new claims, the Applicants respectfully traverse based on the points set forth below.

35 U.S.C. § 102 rejections

By way of review, claim 9 is directed towards a dynamic network management apparatus and recites:

“9. A dynamic network management apparatus placed in a mobile node which participates in a mobile network formed by a mobile access router, comprising:

a connection unit for connecting to a certain router residing in the mobile network,

a sending unit for sending information requesting a global address of the mobile access router to the certain router when the mobile node does not know the global address of the mobile access router, wherein the information is to be forwarded by the certain router connected via the connection unit to the mobile access router, and

a response information receiving unit for receiving response information including the global address of the mobile access router to be sent from the mobile access router as a response to the information sent by the sending unit (emphasis added).”

As indicated above, claim 9 recites three separate entities: (1) a “mobile node”; (2) a router (“certain router”) residing in the mobile network which connects to the mobile node via the connection unit; and (3) a “mobile access router” which forms the mobile network. An exemplary, non-limiting illustration of this configuration is illustrated in FIG. 1, which depicts a “mobile node 1000-1” corresponding to the “mobile node” recited by claim 9, a “local fixed router 1100-1” corresponding to the “certain router” recited by claim 9, and a “mobile access router 1200-1” corresponding to the “mobile access router” recited by claim 9. As explained in the specification, the conventional three-entity configuration in which an intervening local router

lies in between an inner mobile node and the outer mobile router has a problem in that the router advertisement broadcasted by the local fixed router 1100-1 will not contain any “Access-Router-Address-Information” or “ARA-Info” (the information having a primary global address of an access router). (see published U.S. application, paragraph [0028]). The method recited by claim 9 solves this and other problems by configuring a mobile node to obtain the global address of the mobile router in accordance with the features recited by claim 9.

Venkitaraman fails to disclose each of the features recited by claim 9. By way of review, Venkitaraman discloses a method for a mobile node to request information about the router to which it is attached, and more specifically, discloses a method in which the mobile node which is attached to a mobile router obtains a home address of that same mobile router. (paragraphs [0048]-[0049]). In the method disclosed by Venkitaraman, the mobile node sends a “router solicitation” to the mobile router (step 1102 in FIG. 11). In response, the mobile router sends a “router advertisement” including the home address of the mobile router from the mobile router to the mobile node in response to the router solicitation (step 1106 in FIG. 11). Thus, the method disclosed by Venkitaraman clearly only discloses a two-entity configuration, in which the mobile node and the mobile router communicate with each other.

As a result, Venkitaraman fails to disclose numerous features recited by claim 9, including: (1) the three recited entities of a “mobile node,” a “certain router”, and a “mobile access router,” (2) the recited feature of “...a sending unit for sending information requesting a global address of the mobile access router to the certain router when the mobile node does not know the global address of the mobile access router, wherein the information is to be forwarded by the certain router connected via the connection unit to the mobile access router”; and (3) the recited feature of “... a response information receiving unit for receiving response information

including the global address of the mobile access router to be sent from the mobile access router as a response to the information sent by the sending unit.”

Independent claims 10, 24 and 25 now similarly recite these above-noted features distinguishing claim 9 from Venkitaraman. Accordingly, it is respectfully submitted that the rejections of independent claims 9-10 and 24-25 and all claims dependent therefrom should be withdrawn for at least these reasons.

35 U.S.C. §103 rejections

With respect to the rejection of claim 1, claim 1 is directed towards a dynamic network management system and recites:

“1. A dynamic network management system in a communication system including a mobile access router forming a mobile network, a local fixed router residing in the mobile network, and a mobile node participating in the mobile network,

wherein the dynamic network management system is configured so that, when the mobile node sends information requesting a global address of the mobile access router, the mobile access router receiving the information from the mobile node through the local fixed router informs the mobile node about the global address of the mobile access router (emphasis added).”

In the rejection of claim 1, the Office Action (pg. 6) alleges:

“Venkitaraman does not expressly teach that a local fixed router attached to the mobile network relays information between the mobile router and the mobile node.

Janncteau teaches that nodes belonging to the mobile network include mobile router, local fixed nodes (host or router) and local mobile nodes and local fixed outer relays information between the mobile router and the mobile node (FIG. 1, #135, #165, FIG. 6, #235, #652, #657, col. 2, lines 10-14 and 35-37, col. 9 lines 35-44).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Venkitaraman invention to include a

local fixed router in the mobile network to manage the mobility of the node that does not changes its point of attachment to the mobile network (Janneteau, col. 2, lines 10-14).”

However, the Applicants strongly disagree that one skilled in the art at the time of the invention would have been motivated to combine Venkitaraman with Jannetaeu to arrive at the dynamic network management system recited by claim 1.

First, if Venkitaraman were modified to include the local fixed router of Janneteau, the proposed modification would render Venkitaraman unsatisfactory for its intended purpose. It is well-established that “[i]f [a] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” MPEP 2143.01(V). In this case, Janneteau discloses that a mobile router MR1 constructs its own Care-of Router Advertisement message including its own Care-of address, multicasts the Care-of Router message to all nodes on the lower link, and then a local fixed router (LFR) receives the Care-of Router advertisement message. (col. 9, lines 30-44). Although the Office Action appears to equate the Care-of router advertisement disclosed by Janneteau with a normal router advertisement, the Care-of router advertisement disclosed by Janneteau is quite different from the normal router advertisement. According to Janneteau’s disclosure (col. 8, line 61-col. 9, line 57, especially col. 9, lines 43-53), Janneteau’s invention is designed to realized route optimization in the case of nested network configuration. To realize this, when receiving the Care-of router advertisement, an on-route MR (MR 2) extracts the list of care-of addresses 652 from the received Care-of router advertisement, appends its own care-of address to the list of care-of addresses 652, and multicasts the care-of router advertisement including the list to the lower link. (col. 9, lines 38-57).

In contrast, Janneteau discloses that an on-route fixed router (LFR1) receives the care-of router advertisement, extracts the list of care-of addresses 652 from the received Care-of router advertisement, and forwards the care-of router advertisement including the list. (col. 9, lines 42-45).

According to Janneteau, MR2 or LFN1 multicasts the list of care-of addresses to the lower link (sends the list after appending its own care-of address or sends the extracted list) in case of receiving the care-of router advertisement. On the other hand, when MR2 or LFN1 receives the normal router advertisement, they do not perform the above-mentioned multicast.

As described above, a normal router advertisement is sent in Venkitaraman, whereas a special message named “Care-of router advertisement” is sent in Janneteau. Therefore, if Venkitaraman were modified to employ the fixed router disclosed by Janneteau as proposed in the Office Action, the combination could not be operative since a normal Router Advertisement is sent in Venkitaraman, whereas a “Care-of router advertisement” is sent in Janneteau. In other words, the system and messaging disclosed by Venkitaraman is inherently incompatible with the system and messaging disclosed by Janneteau.

Second, Venkitaraman explicitly teaches away from using a fixed router. It is also well-established that “[i]t is improper to combine references where the references teach away from their combination.” MPEP 2145(X)(D)(ii). Here, the Office Action relies on paragraph [0049] of Venkitaraman to reject claim 1. Paragraph [0049] of Venkitaraman discloses:

“At step 1104, the router advertisement informs the mobile node that is attached to a mobile router (as opposed to a fixed router). In one embodiment, this is accomplished by setting an “R” bit in the advertisement to TRUE. At step 1106, the router advertisement informs the mobile node of the home address of the mobile router and at step 1108, the router advertisement instructs the mobile node to use the home address of the mobile router as its care of address (e.g., RCoA), as has been described in relation to FIG. 1 (emphasis added).”

As noted above, Venkitaraman discloses a system in which a mobile node is attached to a mobile router, “as opposed to a fixed router.” This statement is an express teaching away from connecting the mobile node to a fixed router. Thus, one skilled in the art would not have been motivated to modify the system of Venkitaraman to include the fixed local router disclosed by Janneteau, because Venkitaraman expressly teaches away from the combination.

It is further noted that Venkitaraman’s teaching away from using fixed routers, as described in paragraph [0049], is consistent with and supported by the rest of Venkitaraman’s disclosure (see, e.g., paragraph [0028], disclosing “[t]he present invention contemplates that the mobile network node 116 may periodically detach from the mobile router 112 and roam independently from the mobile network 110 to other sites (e.g., site 2) or other mobile networks (not shown)”; paragraph [0009], disclosing “there is a need for a method and apparatus for providing IP mobility for mobile networks that better supports IP mobility for detachable mobile nodes of the mobile network”).

Accordingly, it is respectfully submitted that one skilled in the art would not have been motivated to modify the system of Venkitaraman with the fixed router disclosed by Janneteau to arrive at the system recited by claim 1.

Independent claims 2, 4-5, and 19-20 similarly recite the above-mentioned subject matter of claim 1. Therefore, the Applicants submit that one skilled in the art would not have been motivated to combine Venkitaraman with Janneteau to arrive at any of the methods or apparatuses recited by claims 2, 4-5, and 19-20, for substantially the same reasons as those mentioned above with respect to claim 1. Therefore, allowance of claims 1-2, 4-5, and 19-20, and all claims dependent therefrom, is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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